

MEETING REPORT NO. 21

PROJECT: **Town of Needham Downtown Study**

DATE: 24 October 2007

LOCATION: Broadmeadow School

PRESENT: Downtown Study Committee (DSC)

Kate Fitzpatrick	Town Manager (partial)
Jack Cogswell	Board of Selectmen
Jerry Wasserman	Chairman, Board of Selectmen
Bob Smart	Cochair, DSC Committee
Moe Handel	Cochair, Planning Board
Lee Newman	Planning Director
Alexandra Clee	Assistant Planner
Joyce Moss	Economic Development Officer
Mark Gluesing	Design Review Board
Kathy Lewis	Needham Business Association
Jeanne McKnight	Planning Board & League of Women Voters
John J. McQuillan	Business Owner
Bob Hentschel	Property Owner
Peter Friedenberg	Citizen at Large

Beta Engineering

Kien Ho
Elizabeth McChesney

DiNisco Design Partnership (DDP)

Kenneth DiNisco
Jon Oxman

1. PURPOSE

1.1. The purpose of this meeting was to review the Concept Plan:

- Final Design Recommendations
- BETA's Traffic Analysis
- Discussion with the DSC of adjustments, if any to the Concept Plan
- Vote by the DSC to approve the Concept Plan

2. FINAL DESIGN RECOMMENDATIONS

- 2.1. Ken DiNisco gave a presentation of the Final Design Recommendations. The Concept Plan as originally presented at Community Workshop #2 (06/25/07) was first reviewed. A proposed Revised Concept Plan followed this. Based on feedback from the community, DSC and Selectmen (09/25/07 Presentation), the Maximum Height and Density were cut back in the Center Business District. The impact on the Build-Out Analysis of this change was shown. See attached presentation.

3. TRAFFIC ANALYSIS

- 3.1. Kien Ho presented the Traffic Analysis. See attached presentation. The area of analysis has been expanded from four locations to nine as shown in the presentation. One of the additional intersections was School Street / Chestnut Street for which the Hospital has offered to pay for a signal as mitigation for their proposed expansion.
- 3.2. For each of these locations peak traffic operations were evaluated for existing conditions and various alternative scenarios including signalization and signage improvements. Signalization improvements would include upgrading the equipment and adding such features as interconnected signals and timing adjustments based on traffic flow as measured by sensors.
- 3.3. It was determined that with signalization and signage improvements, traffic operations would be acceptable for a 30% Build-Out which was presented earlier as the likely amount of development based on the Proposed Revised Concept Plan. At 40% Build-Out, the analysis shows that the traffic operations start to fail at some intersections.
- 3.4. See the presentation for Level of Service ratings and wait times for each location as well as estimated design and construction costs for signalization improvements.
- 3.5. In addition to signalization improvements Kien discussed other mitigations including:
 - Secondary Roadways Diversions
 - Transportation Demand Management Measures (TDM)
 - Carpool
 - Transits
 - Employee Parking Facility
 - Parking Management During Peak Hour Commute

4. CONCEPT PLAN VOTE

- 4.1. The DSC discussed the merits of the Concept Plan as originally presented compared to the Revised Concept Plan with reduced height and density in the Center Business District. It was agreed that the DSC would vote on the Concept Plan at the next meeting.

5. NEXT STEPS

5.1. Concept Plan Phase

- 2 alternative Height and Density Plans will be forwarded to the DSC in advance of the next meeting.
- A draft of the Concept Plan of the will be forwarded to the DSC for their review and comments.

5.2. Comprehensive Development Phase

- Visualizations of likely development at 10, 15 and 20 years out will be prepared.
- Discussion and establishment of Floor Area Ratios (FAR) as part of the Comprehensive Development Plan.
- Accommodation of required parking to meet proposed Build-Out
- Priority and cost of Streetscape improvements
- Design Guidelines

6. NEXT MEETINGS

- 6.1. The DSC will meet on Tuesday, 13 November 2007 at 7:30 AM at Needham Public Library.

The discussions of this meeting are recorded as understood by the writer. Please advise the writer of any omissions or corrections.



Jon Oxman AIA
DiNISCO DESIGN

JAO/

cc: DSC
Kenneth DiNisco
Richard Rice

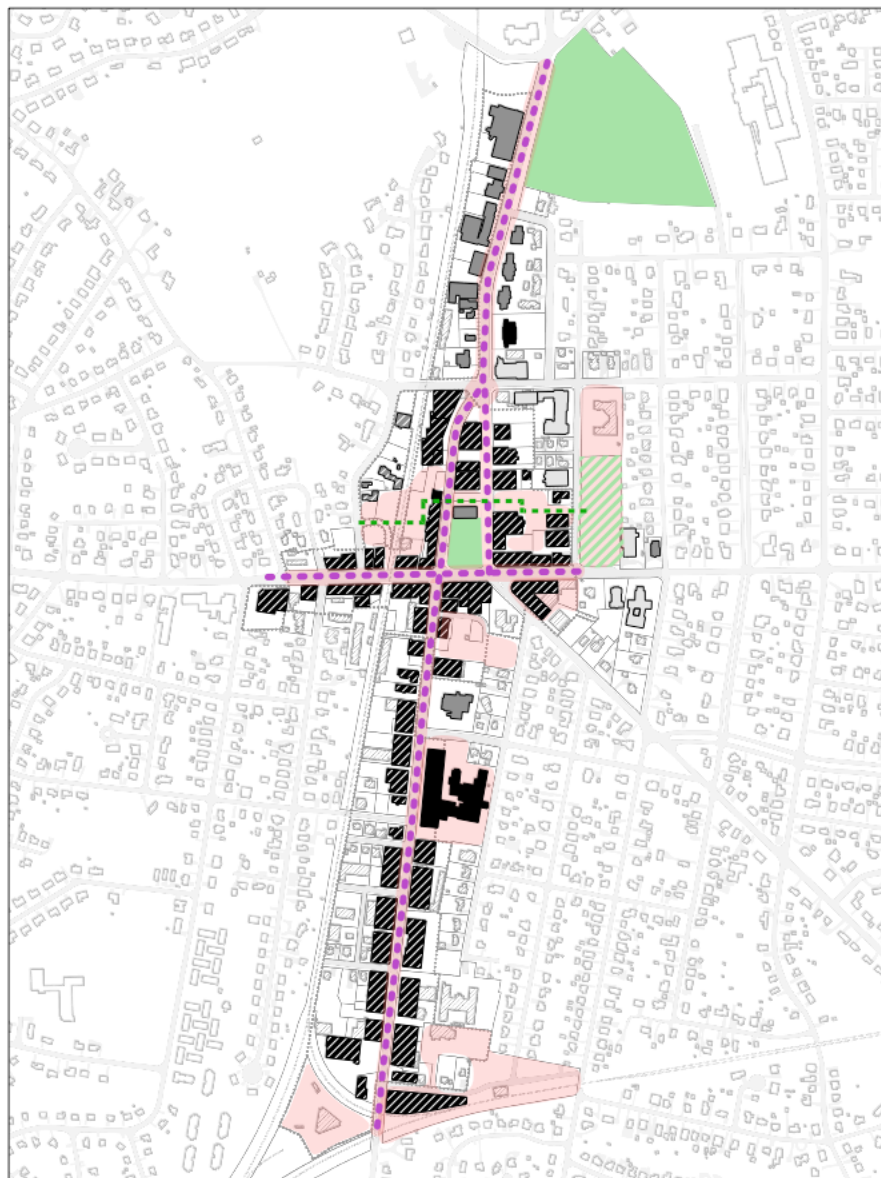
Enclosures: 1. Presentation: DSC Meeting (10/24/07)









Needham
Downtown Study
Committee Meeting
24 October 2007

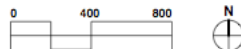
Concept Plan

(06/25/07)

CONCEPT PLAN (06/25/07)

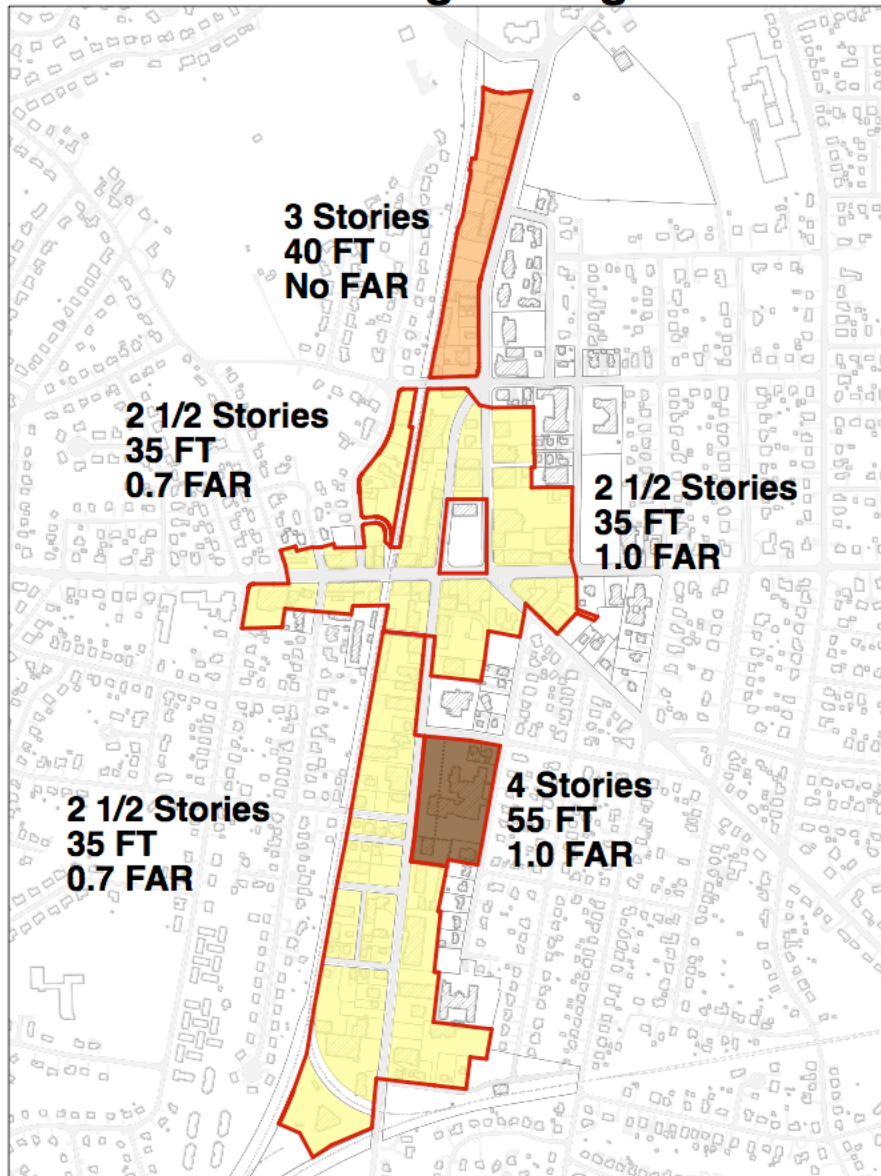


-  1 Story
-  2 Stories
-  2 +1 Stories
-  3 Stories
-  3 +1 Stories
-  4 Stories
-  Open Space
-  Areas of Potential Development
-  Streetscape / Infrastructure Improvements
-  Pedestrian Link

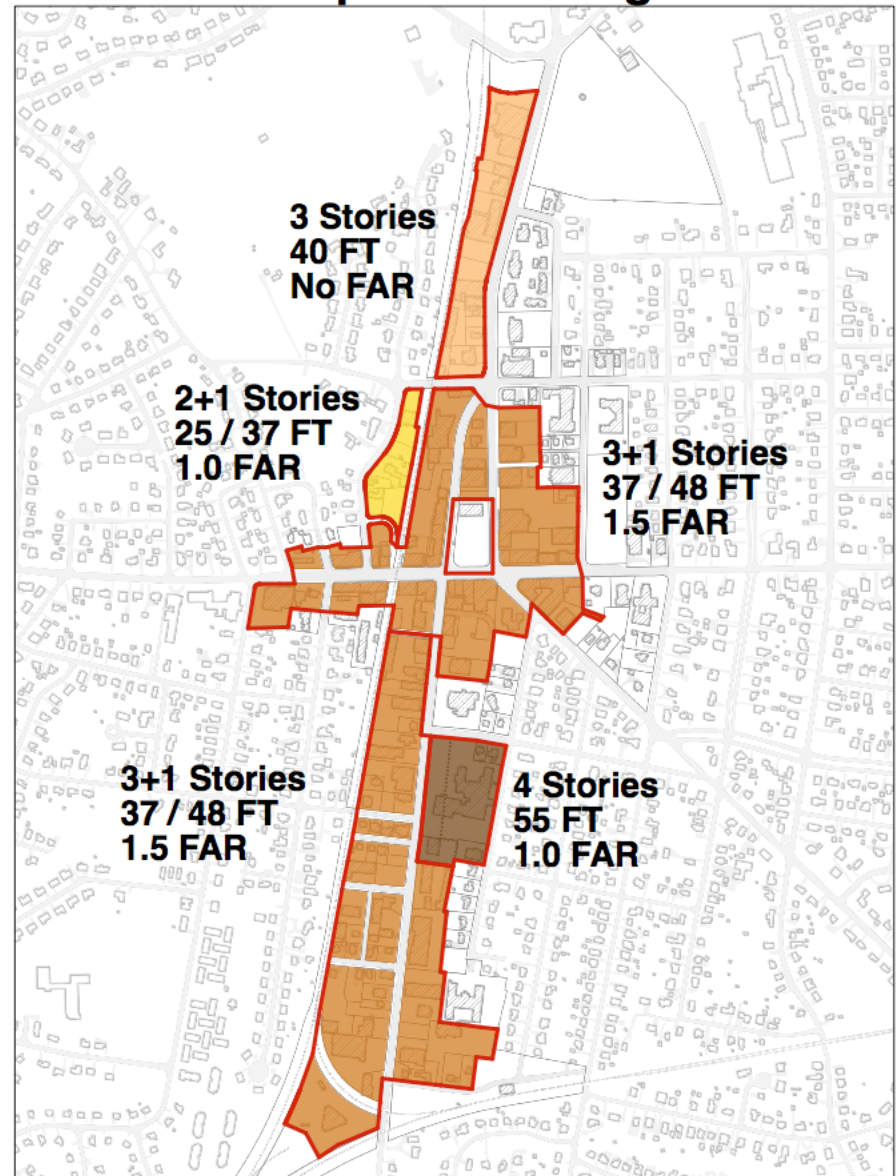


CONCEPT PLAN (06/25/07) - Maximum Height & Density

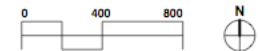
Existing Zoning



Proposed Zoning

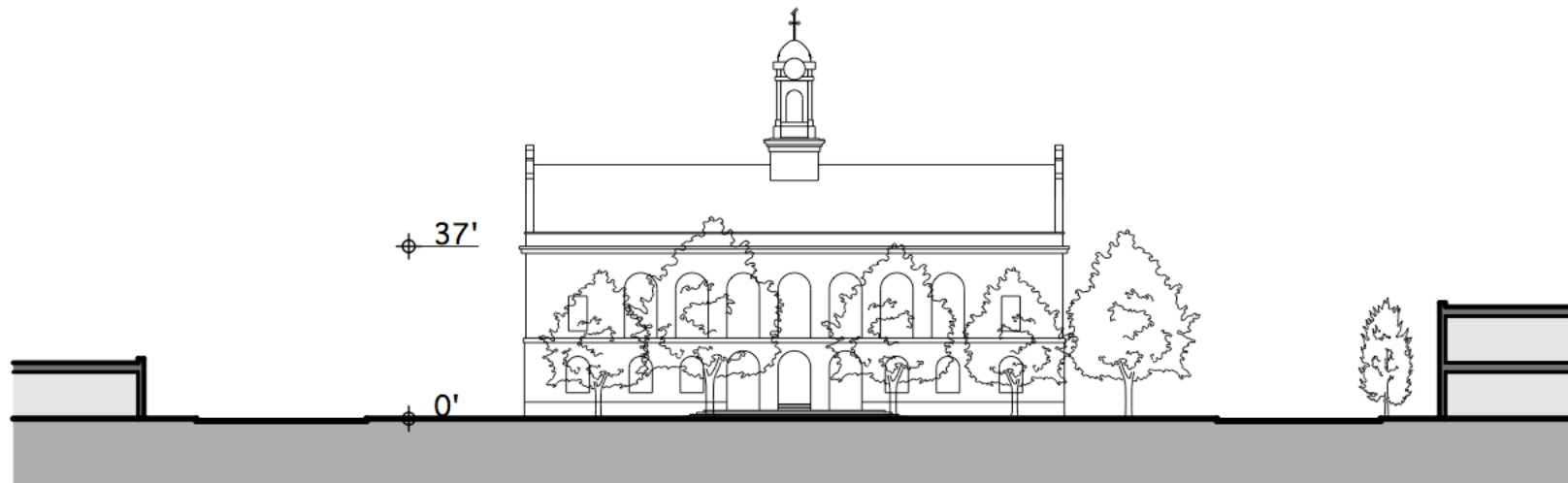


2 1/2 Stories 2+1 Stories 3 Stories 3+1 Stories 4 Stories Zoning District Boundaries

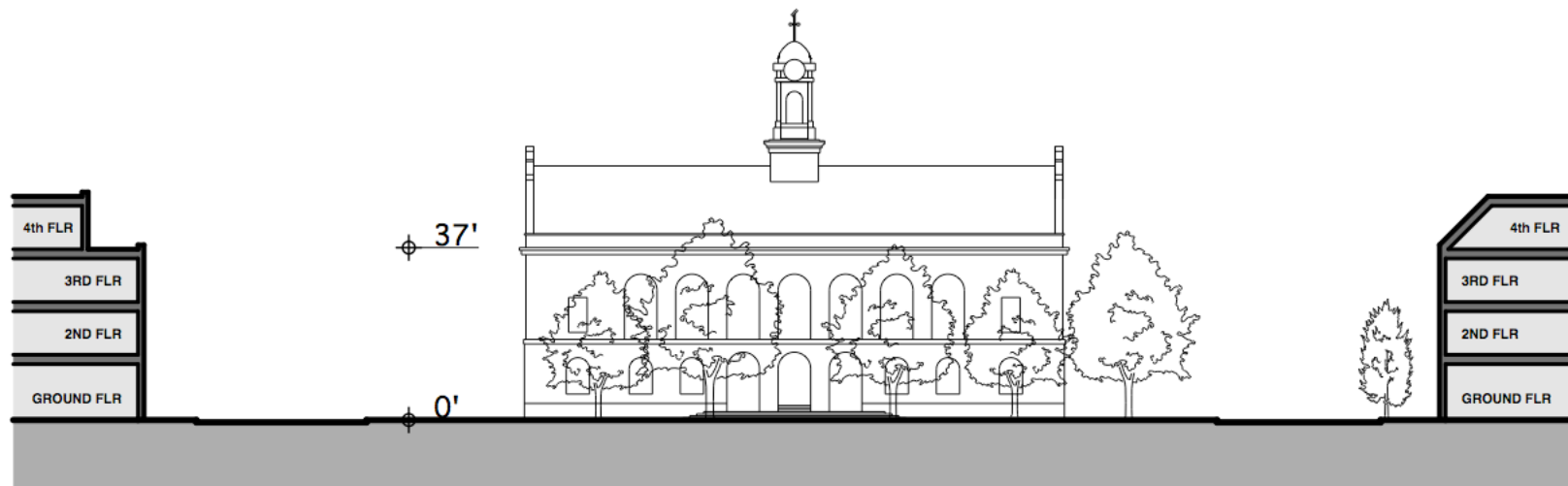


CENTER BUSINESS DISTRICT - Town Common Site Section

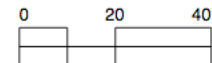
East - West Cross Section Looking North



Existing



Proposed (06/25/07)



CONCEPT PLAN (06/25/07) - Build-Out Analysis

100% Effective* Build-Out Under Proposed Zoning

District	Existing (SF)	Additional (SF)	Total (SF)
Highland Avenue Business District	118,829	28,637	147,466
Center Business District	554,710	284,846	839,556
Chestnut Street Business District	556,147	447,836	1,003,983
TOTAL	1,229,686	761,319	1,991,005

***100% Effective Build-Out**

1. Includes parcels with > 15,000 SF of land area.
2. Includes only those parcels with ≥ 50% expansion potential.

Traffic Analysis

EXISTING CONDITIONS - Traffic - 2007



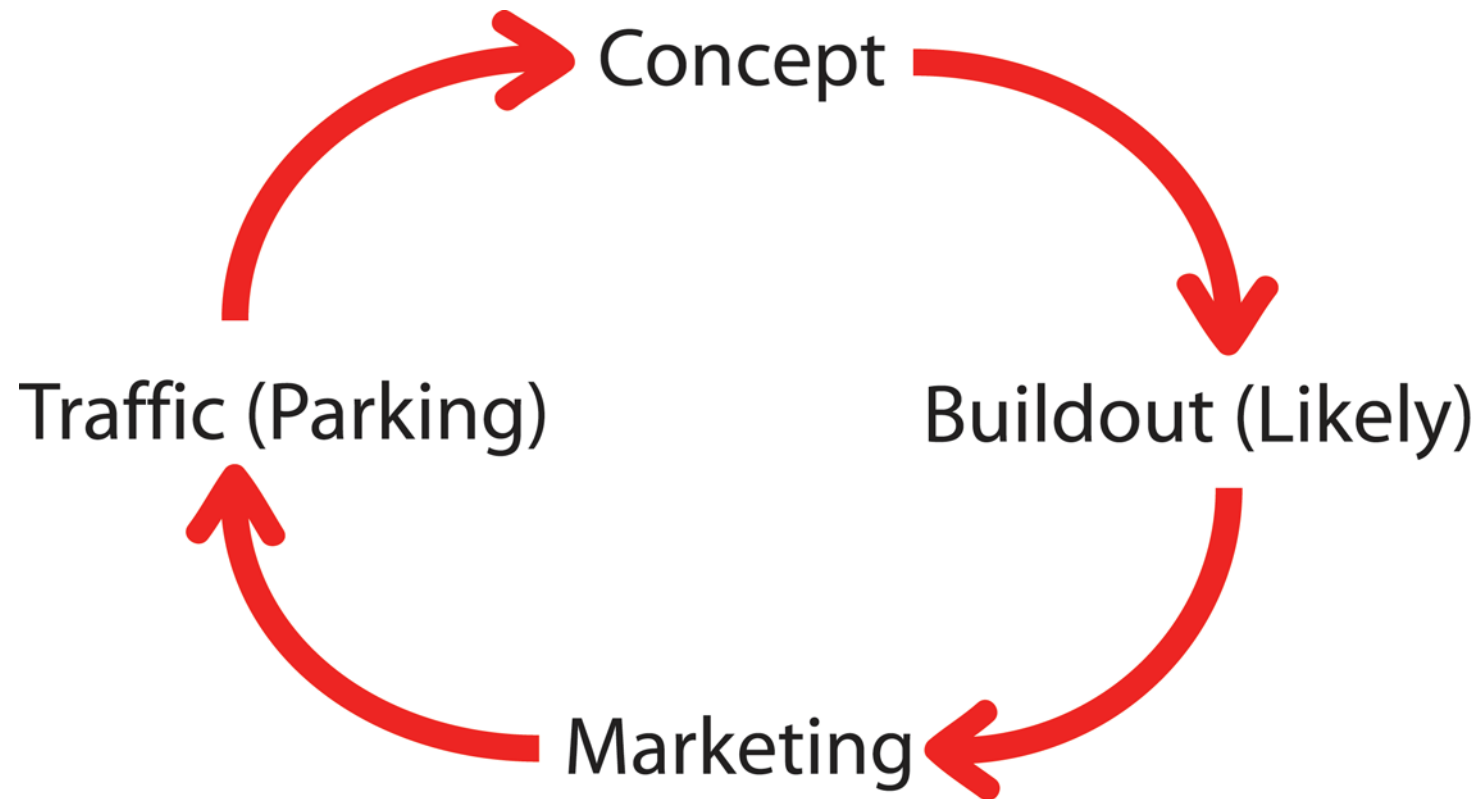
EXISTING CONDITIONS - Traffic - 2027 - "No Build"



CONCEPT PLAN (06/25/07) - Traffic Impact - 2027



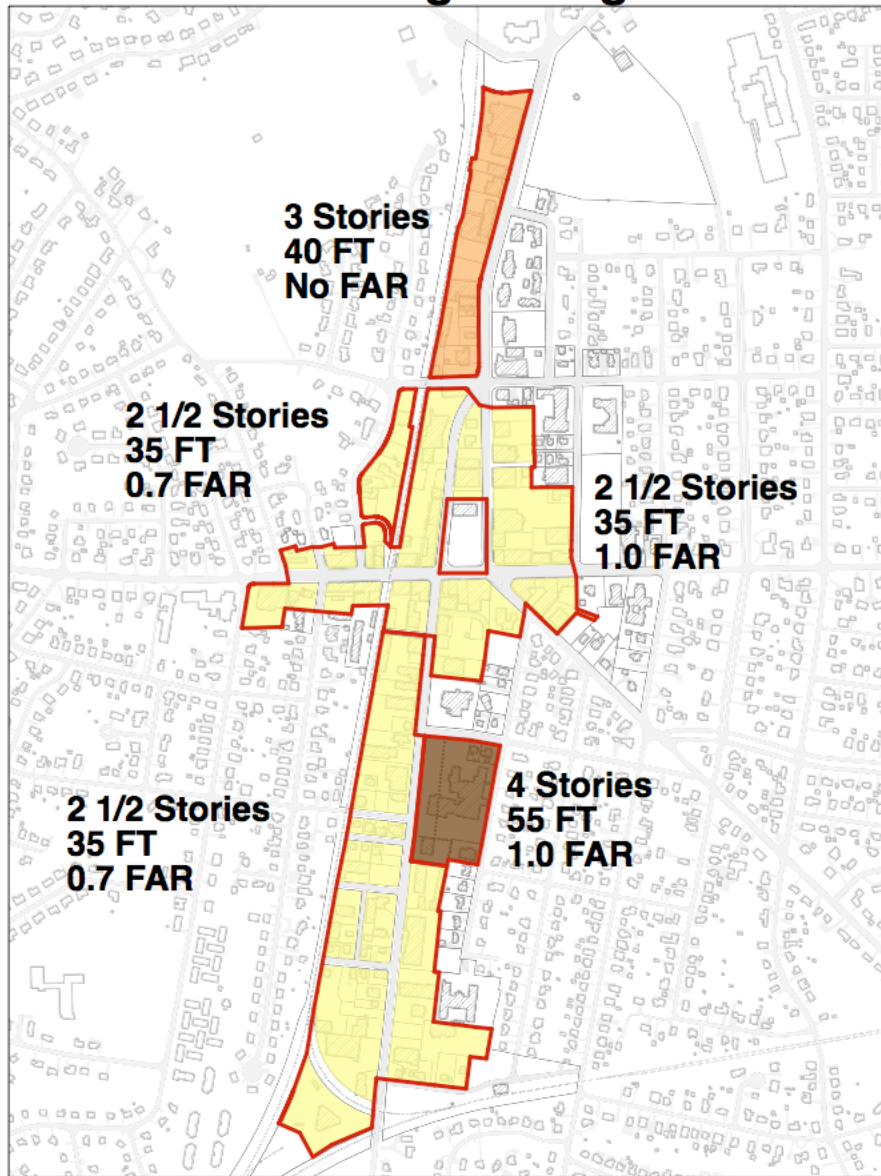
REVISED CONCEPT PLAN - Build-Out / Market / Traffic



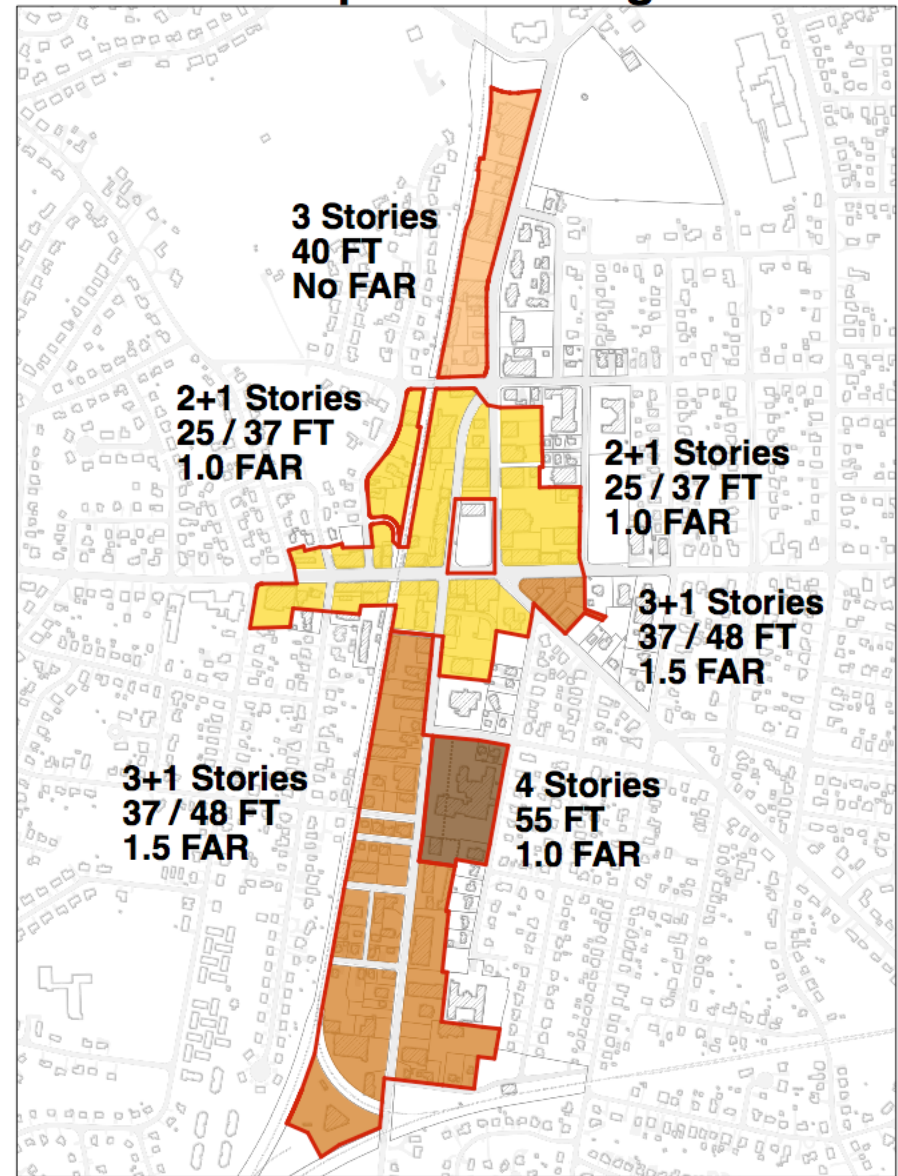
Revised Concept Plan

REVISED CONCEPT PLAN - Maximum Height & Density

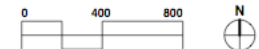
Existing Zoning



Proposed Zoning



2 1/2 Stories 2+1 Stories 3 Stories 3+1 Stories 4 Stories Zoning District Boundaries



REVISED CONCEPT PLAN - Build-Out Analysis

Build-Out Under Proposed Zoning

District	Existing (SF)	Existing + 100% Effective* Build-Out (SF)	Existing + 30% Effective Build-Out (SF)
Highland Avenue Business District	118,829	147,466	127,420
Center Business District	554,710	768,710	618,910
Chestnut Street Business District	556,147	1,003,983	690,498
TOTAL	1,229,686	1,920,159	1,436,828

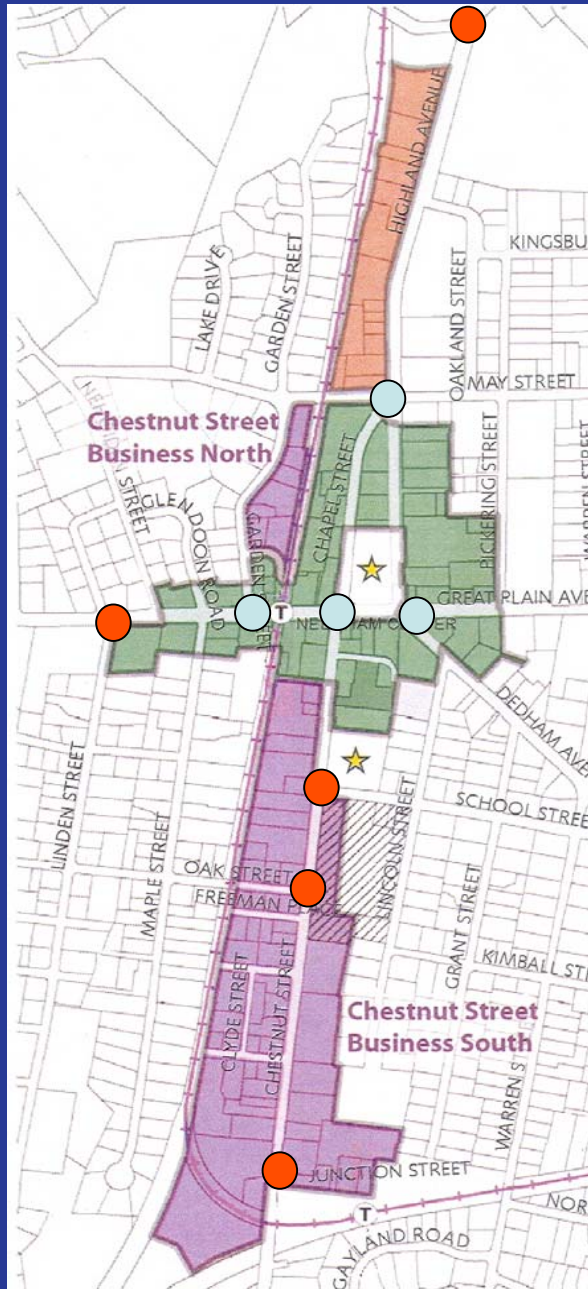
***100% Effective Build-Out**

1. Includes parcels with > 15,000 SF of land area.
2. Includes only those parcels with ≥ 50% expansion potential.

TRAFFIC ANALYSIS - Summary

Intersection	30% Build-Out 2027		30% Build-Out 2027 With Traffic Response System Improvement	
	Level of Service	Delay (Seconds)	Level of Service	Delay (Seconds)
May St / Highland Ave	E	58.5	D	52.7
Dedham Ave / Highland Ave / Great Plain Ave	D	36.8	C	34.2
Chapel St / Great Plain Ave	D	53.1	D	43.8
School St / Chestnut St	C	25.5	C	21.9

TRAFFIC ANALYSIS - Expanded Traffic Study Locations



Previous Traffic Study Locations

- May Street / Highland Avenue
- Garden St/ Great Plain Ave
- Chapel St/ Chestnut St / GPA
- Highland St/Dedham Ave /GPA

Expanded Traffic Study Locations

- Rosemary Street / Highland Avenue
- Linden Street / GPA
- School Street / Chestnut Street
- Oak Street / Chestnut Street
- Junction St / Chestnut Street

TRAFFIC ANALYSIS - Peak Traffic Operations - Signalized



Existing	Exist w/ Signal upgrade	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	30% Build w/TRS Improvements
D	C	D	F	D	D	C

Existing	Exist w/ Signal upgrade	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	30% Build w/TRS Improvements
E	D	E	F	F	E	D

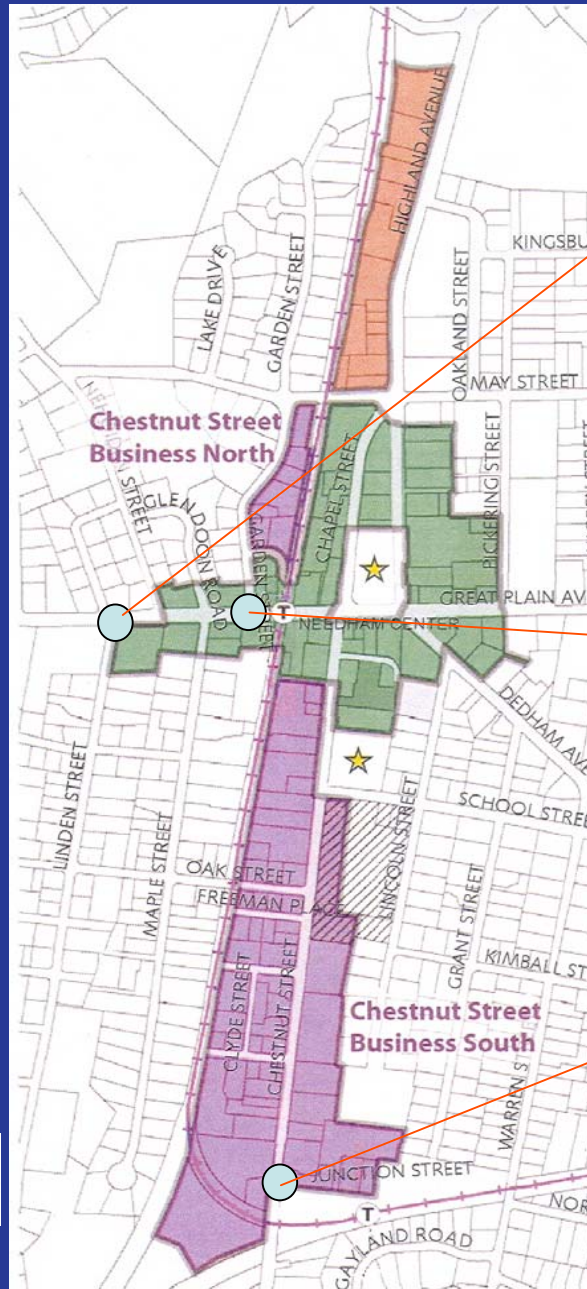
Existing	Exist w/ Signal upgrade	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	30% Build w/TRS Improvements
F	D	E	F	F	D	D

Existing	Exist w/ Signal upgrade	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	30% Build w/TRS Improvements
E	D	E	F	F	D	C

Existing	Exist w/ Signal upgrade	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	30% Build w/TRS Improvements
F	B	C	F	D	C	C

Existing	Exist w/ Signal upgrade	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	30% Build w/TRS Improvements
C	C	C	D	C	C	C

TRAFFIC ANALYSIS - Peak Traffic Operations - UnSignalized



	Existing	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	Mitigation
SB-Washburn Ave	C	E	F	F	E	Signage Improvements & Develop TMP to reduce school traffic
EB-GPA	A	A	A	A	A	
WB-GPA	A	A	A	A	A	
NB-Linden St	E	F	F	F	F	

	Existing	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	Mitigation
SB-Garden St	C	E	F	F	C	Signage Improvements
EB-GPA	A	A	A	A	A	
WB-GPA	A	A	A	A	A	

	Existing	No Build 2027	100% Build 2027	40% Build 2027	30% Build 2027	Mitigation
SB-Chestnut St	A	A	A	A	A	Signage Improvements
EB-Driveway	E	F	F	F	F	
WB-Junction St	F	F	F	F	F	
NB-Chestnut St	A	A	A	A	A	

TRAFFIC ANALYSIS - Other Mitigations

- **Secondary Roadways Diversions**
- **TDM**
 - **Carpool**
 - **Transits**
- **Employee Parking Facility**
- **Parking Management During Peak Hour Commute**

TRAFFIC ANALYSIS - PM Peak Hour Analysis

Intersection Location	Approach	Existing		Existing with Signal Upgrade		No-Build (2017) 10-Yr.		No-Build (2027) 20-Yr.		100% Build-Out 2027		40% Build-Out 2027		30% Build-Out 2027		30% Build-Out 2027 With Traffic Response System Improvement		Mitigation	Construction & Design Cost **
		LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)		
Rosemary St/Highland Ave	SB	B	15.0	C	24.2	B	15.3	C	20.5	C	24.0	C	20.2	C	21.2	B	19.2	Upgrade traffic signal with traffic response and closed loop system.	Construction & Design Cost: 450,000
	EB	E	71.2	C	32.4	D	35.0	C	26.7	D	40.1	C	31.1	C	28.8	C	27.9		
	WB	F	198.4	D	45.9	D	50.6	D	43.2	F	133.2	E	63.0	D	42.9	D	38.8		
	NB	B	15.3	C	30.4	B	19.3	E	61.8	F	163.3	E	77.4	E	61.6	D	45.4		
	Overall	D	45.6	C	30.6	C	24.1	D	41.1	F	98.9	D	50.9	D	41.1	C	33.3		
May St/Highland Ave	SB	C	31.0	C	28.4	C	34.2	D	37.1	F	179.2	E	60.0	D	39.2	C	33.2	Upgrade traffic signal with traffic response and closed loop system.	Construction & Design Cost: 50,000
	EB	F	160.5	F	116.7	F	164.0	F	230.7	F	289.3	F	274.1	F	164.2	F	151.3		
	NE	C	29.8	B	11.3	B	17.0	C	21.0	F	102.4	D	46.2	C	24.2	C	22.7		
	WB	D	53.1	E	69.5	E	70.9	F	135.4	F	168.9	F	16.02	F	85.3	E	75.4		
	NB	D	41.1	D	40.4	D	45.0	D	40.5	F	125.3	D	52.3	D	37.8	D	36.8		
	Overall	E	55.2	D	45.3	E	56.8	E	76.5	F	164.3	F	98.5	E	58.5	D	52.7		
Dedham Ave/ Highland Ave/GPA	SB	F	84.7	E	66.7	E	56.0	E	76.6	F	112.2	F	86.2	D	35.7	C	32.7	Upgrade traffic signal with traffic response and closed loop system.	Construction & Design Cost: 450,000
	EB	E	69.2	B	11.2	B	13.3	B	15.9	E	70.6	D	45.0	B	15.7	B	14.7		
	WB	D	46.1	C	21.3	C	22.6	C	23.3	E	64.1	D	45.9	C	29.9	C	29.3		
	NB	E	57.9	D	51.8	F	83.4	F	115.6	F	*	F	154.9	E	66.8	E	61.4		
	Overall	E	65.2	D	36.4	D	43.1	E	57.1	F	149.6	F	83.6	D	36.8	C	34.2		
Chapel St/Great Plain Ave	SB	F	92.9	D	41.2	D	39.6	D	46.1	F	149.1	E	74.5	D	52.7	E	55.5	Upgrade traffic signal with traffic response and closed loop system. NOTE: Train impacts this intersection	Construction & Design Cost: 450,000
	EB	F	167.1	F	94.3	F	117.7	F	119.2	F	*	F	245.3	E	79.5	D	53.0		
	WB	F	89.0	C	32.6	C	25.5	C	27.2	F	273.3	F	103.1	C	21.4	B	18.3		
	NB	D	47.7	D	44.0	C	31.5	D	54.0	F	176.5	E	79.2	E	56.3	D	48.1		
	Overall	F	99.8	D	53.9	D	54.7	E	62.9	F	258.4	F	126.3	D	53.1	D	43.8		
Oak St/Chestnut St	SB	C	34.3	C	26.7	B	13.1	B	16.3	E	72.1	B	19.1	B	17.1	B	15.8	Upgrade traffic signal with traffic response and closed loop system.	Construction & Design Cost: 450,000
	EB	D	44.4	D	39.7	D	49.8	D	50.9	F	122.3	E	60.9	E	57.6	E	55.4		
	WB	C	32.1	C	22.4	C	32.3	C	31.5	D	42.7	C	34.7	C	34.4	C	34.2		
	NB	B	15.0	B	17.0	B	10.2	B	11.5	B	14.8	B	13.5	B	11.7	B	11.3		
	Overall	C	28.2	C	24.8	B	19.1	C	21.0	D	54.6	C	24.2	C	21.7	C	20.7		

* Capacity exceeded

** 2008 Dollars

*** 690,000 Square Feet Effective Build-Out at 100% [2 +1] in Center District

TRAFFIC ANALYSIS - PM Peak Hour Analysis

Intersection Location	Approach	Existing		Existing with Signal Upgrade		No-Build (2017) 10-Yr.		No-Build (2027) 20-Yr.		100% Build-Out 2027		40% Build-Out 2027		30% Build-Out 2027		30% Build-Out 2027 With Traffic Response System Improvement		Mitigation	Construction & Design Cost **
		LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)		
School St/Chestnut St	SB	A	1.7	A	1.7	B	13.5	B	16.6	F	176.2	C	33.2	B	15.2	B	13.7	Install traffic signal with traffic response and closed loop system.	Construction & Design Cost: 450,000
	EB	C	19.5	C	19.8	B	16.2	B	16.5	C	21.7	B	19.9	C	21.7	C	22.3		
	WB	F	*	F	*	E	60.3	E	75.3	F	219.0	F	139.4	F	98.7	E	79.4		
	NB	A	0.4	A	0.4	A	9.9	B	11.1	C	20.9	B	14.2	A	9.4	A	9.2		
	Overall	N/A	N/A	N/A	N/A	C	20.1	C	24.4	F	116.3	D	42.0	C	25.5	C	21.9		
Linden St/Great Plain Ave	SB	C	24.5	C	24.5	D	30.5	E	41.8	F	100.3	F	68.6	E	39.0	D	32.8	- Signage Improvements - Develop Traffic Management Plan to reduce school traffic.	Construction & Design Cost: 2,500
	EB	A	0.3	A	0.3	A	0.3	A	0.4	A	0.5	A	0.4	A	0.2	A	0.2		
	WB	A	3.6	A	3.6	A	4.3	A	5.3	A	7.3	A	6.0	A	5.6	A	5.0		
	NB	E	49.1	E	49.1	F	113.4	F	*	F	*	F	*	F	231.5	F	125.0		
Junction St/Chestnut St	SB	A	2.1	A	2.1	A	2.3	A	2.6	A	4.4	A	3.2	A	2.4	A	2.2	Signage Improvements	Construction & Design Cost: 2,500
	EB	E	48.4	E	43.8	F	58.2	F	100.2	F	*	F	*	F	119.2	F	83.3		
	WB	F	109.7	F	87.9	F	196.1	F	*	F	*	F	*	F	184.9	F	92.8		
	NB	A	0.3	A	0.3	A	0.3	A	0.4	A	0.6	A	0.5	A	0.2	A	0.1		
Garden St/Great Plain Ave	SB	C	18.2	C	18.2	C	23.1	E	36.1	F	134.8	F	62.6	C	24.1	C	20.5	Signage Improvements	Construction & Design Cost: 2,500
	EB	A	1.3	A	1.3	A	1.4	A	1.6	A	2.3	A	1.9	A	1.7	A	1.5		
	WB	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0		

* Capacity exceeded

** 2008 Dollars

*** 690,000 Square Feet Effective Build-Out at 100% [2 +1] in Center District